

R E M A R K S

Claims 1-4 have been canceled. Claims 5-13 remain pending in the application.

Applicants amend claim 9 for further clarification. No new matter has been added.

The Examiner objected to claim 9 for the apparent informality of not including “for” for “means” features. Applicants amend claim 9 to remove the “means” terms, and respectfully request that the Examiner withdraw the objection.

Applicants enclose “Figs. A-C,” which respectively illustrate an exemplary embodiment of the claimed invention, Applicants’ understanding of the cited disclosure from McCanne, and Applicants’ understanding of the cited disclosure from Delaney et al. With reference to the enclosed “Figs. A-C,” Applicants respectfully submit the following remarks in traversing the Examiner’s rejections.

Claims 5, 9, and 11 stand rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,937,574 to Delaney et al. Applicants respectfully traverse the rejection.

Regarding the claimed features of “first relaying apparatuses generating a virtual private network,” the cited portions of Delaney et al.—Fig. 2, col. 6, lines 57-67; col. 7, lines 10-22; col. 8, lines 13-21 thereof—merely include description of setting a multicast address, and fail to disclose or suggest the claimed control packets. Regarding the claimed “second relaying apparatuses establishing through the virtual links,” the cited portions of Delaney et al.—Fig. 3, col. 7, lines 48-63 thereof—do not include any disclosure or suggestion of the claimed reply packets. And regarding the claimed features of “whereby the virtual links multicast address,” the cited portions of Delaney et al.—col. 10, lines 38-67; col. 11, lines 25-28 thereof—do not include any disclosure or suggestion of virtual links (IP tunnel) being mutually independent for each multicast address group by the claimed “relaying apparatuses” based on control and reply packets features described above.

With reference to enclosed “Fig. C,” the access switch described in Delaney et al.—

which the Examiner corresponded to the claimed relaying apparatuses—does not transmit control packets or reply packets to establish a path, but preliminarily learns from which of access switches, except the switch itself, a message is coming (say in a direction from R1, R2 to S1, S2 as shown in “Fig. C”); in an opposite direction (say from S1, S2 to R1, R2 shown in “Fig. C”), a packet is transmitted in a unicast mode to a proper opponent access switch by referring to the learnt contents according to the destination where at an unlearned stage a packet is transmitted to all of the access switches related to a VPN by using a multicast address of a backbone network since it is unknown to which of the access switches the packet should be transmitted. This technology cannot be used for IP network without learning.

Thus, Delaney et al., as cited and relied upon by the Examiner, fail to disclose,

“[a] virtual private network construction system for a public data communication network comprising:

first relaying apparatuses generating and multicasting control packets each of which contains a multicast address for constructing a virtual private network, and

second relaying apparatuses establishing virtual links to the first relaying apparatuses which are transmitting sources of the control packets upon receipt thereof and for returning reply packets through the virtual links,

whereby the virtual links are established between all pairs of virtual relaying structures included and independently operable per virtual private network in the first and the second relaying apparatuses to construct the virtual private networks that are preliminarily associated with the virtual relaying structures provided with receiving virtual interfaces and belonging to a multicast address group represented by the multicast address,” as recited in claim 5. (Emphasis added)

Accordingly, Applicants respectfully submit that claim 5 is patentable over Delaney et al. for at least the foregoing reasons. Claim 9 incorporates features that correspond to those of claim 5 cited above, and is, therefore, together with claim 11 dependent therefrom, patentable over Delaney et al. for at least the same reasons.

Claims 5, 9, and 11 stand rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,611,872 to McCanne; and claims 6-8, 10, and 12-13 were rejected under 35 U.S.C. § 103(a) as being unpatentable over McCanne in view of U.S. Patent No. 6,438,612 to Ylonen et al. Applicants respectfully traverse the rejections.

Regarding the claimed features of “first relaying apparatuses generating a virtual private network,” the cited portions of McCanne—Fig. 6, col. 30, lines 30-48 thereof—only include description of an “overlay header,” and fail to disclose or suggest the claimed control packets. Regarding the claimed “second relaying apparatuses establishing through the virtual links,” the cited portions of McCanne—Fig. 6, col. 30, lines 51-57 thereof—fail to disclose or suggest the claimed reply packets and virtual links. And, indeed, Fig. 6 of McCanne fails to show any packet return route. Applicants respectfully submit that McCanne, as cited and relied upon by the Examiner, merely describes setting statically the relationship between overlay addresses and native multicast addresses.

In other words, McCanne, as cited and relied upon by the Examiner, does not disclose,

“[a] virtual private network construction system for a public data communication network comprising:
first relaying apparatuses generating and multicasting control packets each of which contains a multicast address for constructing a virtual private network, and
second relaying apparatuses establishing virtual links to the first relaying apparatuses which are transmitting sources of the control packets upon receipt thereof and for returning reply packets through the virtual links,
whereby the virtual links are established between all pairs of virtual relaying structures included and independently operable per virtual private network in the first and the second relaying apparatuses to construct the virtual private networks that are preliminarily associated with the virtual relaying structures provided with receiving virtual interfaces and belonging to a multicast address group represented by the multicast address,” as recited in claim 5. (Emphasis added)

